

## **Dr. Linda R. Coney**

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### **Education:**

2000: **Ph.D., Physics, University of Notre Dame**

Thesis: "Diffractive  $W$  and  $Z$  Boson Production in  $p\bar{p}$  Collisions at  $\sqrt{s} = 1800$  GeV."

1997: **M.A., Physics, University of Notre Dame**

1993: **B.S., Physics and Mathematics (Magna Cum Laude), Hope College**

### **Academic Positions:**

Current: Visiting Assistant Professor of Physics, Hope College

2001-2006: Postdoctoral Research Associate, Columbia University

2000: Postdoctoral Research Associate, University of Notre Dame

1993-2000: Graduate Student, University of Notre Dame

1995-2000: Research Assistant, 1994: Arthur J. Schmitt Presidential Fellow

### **Awards:**

Arthur J. Schmitt Presidential Fellowship, University of Notre Dame, 1993-1994

Douwe B. Yntema Prize in Physics and Senior Sigma Xi Award for Physics, Hope College, 1993

Phi Beta Kappa Honor Society, Hope College, 1993

### **Professional Committees:**

2004-2005: APS Neutrino Study Booklet Committee

2002-2003: Organizing Committee, NuFact03 Workshop

2001: Young Physicist Forum Committee member, Snowmass 2001

1997-1999: Fermilab Users' Executive Committee member

Chair of Quality of Life and Younger Physicists Issues Subcommittees

### **Research Experience:**

- MiniBooNE Experiment (E898), member 2001-present:
  - Measured pion production on MiniBooNE target at HARP and reduced systematic uncertainties on MiniBooNE neutrino flux.
  - Led Columbia University HARP group and guided tasking of graduate students.
  - Supervised data taking at HARP for MiniBooNE.
  - Tested and developed diagnostic system to monitor accelerator devices in Booster and identify instabilities. Integrated system into permanent data logger to allow long term machine studies.
  - Drove project to use ramped dipole correctors in Booster to control beam motion. Used new correctors to reduce beam losses near sensitive equipment.
  - Computer skills: Latex, MS Powerpoint, MS Word, UNIX, LINUX, Microsoft Windows NT, VMS, Fortran, C++, JAVA, HTML, GEANT4, ICOOL, emacs, CVS, LSF, ROOT, PAW

- HARP (Hadron Production Experiment at CERN - PS214) member 2001-present:
  - Enabled measurement of cross section backgrounds by identifying need for empty target data for each HARP target. Ensured high data quality by calculating appropriate beam settings and monitoring spectrometer detectors.
  - Led HARP Production Group which provided data and Monte Carlo samples to entire experiment for calibration and analysis purposes.
  - Measured  $\pi^+$  production cross section in p-Al and p-Be collisions which were used to reduce systematic error in K2K and MiniBooNE neutrino fluxes, respectively.
  - Coordinated data management on three continents while maintaining data quality and consistency of production methods. Developed system to enable remote-site HARP analysis at Fermilab, Los Alamos National Lab, and universities in Europe and Japan.
  - Analyzed, tuned, and validated simulations of HARP threshold Cerenkov detector.
- DØ Experiment, member 1995-2004:
  - Identified first diffractive Z boson production in  $p\bar{p}$  collisions.
  - Measured diffractive component of W and Z boson production in  $p\bar{p}$  collisions.
  - Discovered miscalculation of reconstructed photon energies which degraded calibration of jet response. Implemented photon energy scale correction which dramatically improved DØ jet response calculation.
  - Directed Central Fiber Tracker(CFT) fiber lightguide quality control project.
  - Developed testing procedure using X-ray source and scintillating fiber ribbons to measure production quality of lightguides fabricated for CFT.

### **Communications and Administration:**

- Organized and hosted NuFact03 conference at Columbia University.
- Served as elected member of Fermilab Users' Executive Committee (UEC).
- Addressed members of Congressional staff, Presidential Budget Office representatives, and Department of Energy personnel to promote high energy physics research done Fermilab.

### **Outreach Activities:**

- 2005: Hosted Fermilab Girl Scout Workshop with over 100 girls for second year in a row.
- 2003: Led Girls Scientific Salon at Fermilab involving junior high school girls in hands-on physics experiments.
- 2002: Created and performed interactive demonstration program on Light and Color for grade school students.
- 2001-2002: Developed National Science Foundation proposal with YPP to create and distribute particle physics instructional kits for primary school students.

### **Full List of Publications Available Upon Request**